

Discussion Group T05: Overspeed Trip Systems

Leaders:

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Suggested Topics:

- Electronic overspeed detection system (speed sensors and logic devices)
 - Number, logic
 - Speed sensing gear
 - Sensor type
- Electro-hydraulic solenoid valves
 - De-energize to shutdown (API default)
 - Number, location, orientation (vertical or horizontal)
 - Built in position sensor
 - Detection system to alarm on failure of the coil; change online
 - Capable of on-line testing without defeating trip protection
- Emergency trip valve(s)/combined trip and throttle valve(s)
 - "Mechanical latch type" and "Oil operated/actuated type"
 - Periodic online exercising - partial stroke test (frequency)
 - Full instrument loop "proof" test (frequency)
 - Valve overhaul (repair shop, overhaul frequency, etc.)
 - Systems with duplicate trip valves arranged in parallel
 - OEM upgrades (i.e. metallurgy, etc.)
- Non-return valve on extraction turbines
 - Overspeed initiates a signal to close non-return valve
 - Types (spring-loaded hydraulic actuated cylinder; pneumatic actuated cylinder)
 - Valve overhaul (repair shop, overhaul frequency, etc.)
 - Testing
- Mechanical overspeed system
 - Test frequency

- Exhaust vacuum breaker
- "Back up" coupling feature for steam turbine applications to stay coupled to load/inertia upon main coupling failure
- Other API 612, 611, 670 and ASME PTC 20.2 items